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BRITISH ARMY'S APPROACH TO ARTIFICIAL INTELLIGENCE

A guide to accelerate the Army's adoption of AI and get
the Army AI ready

October 2023



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FOREWORD

The environment in which the Army operates continues to be ever more dynamic, complex and rapidly evolving. Against a backdrop of societal and environmental change, adversaries are investing heavily in the application of emerging technologies which challenge our capabilities and threaten our national interests.

The adoption of innovative commercial and military technologies, at the pace of relevance, is essential to achieve competitive advantage as the British Army adapts and transforms. Artificial Intelligence is one of those technologies.

The British Army's Approach to AI sets out how we will plan and prepare to become 'AI Ready'. It defines how we will adopt and scale AI at pace, to ensure the whole the force benefits from back office to battlefield through the integration of cutting-edge AI capabilities; how we build an ecosystem of industry and academic partners; and grow stronger through international collaborations with allies to both shape and promote global AI development and the assured, safe, responsible and ethical use of military AI - strengthening our collective Defence and National Security and maintaining the values of our Liberal Democracy. The Approach is purposely disruptive. The weaponisation of data – in both the physical and virtual domains requires tangential thinking, to ensure we maintain pace with the high velocity technology changes associated with machine intelligent processes.

The Approach focuses on our brilliant people, the Army's most important strategic asset. Human-centricity, user focussed capability and novel learning techniques, combined with relevant and critical technology enablers, will ensure decision advantage is delivered to an AI enhanced whole force. All of which is underpinned by a strong ethical and legal foundation that will ensure the Army is a trusted and responsible user of AI.

In a highly technical and power competition era, this marks a much needed and exciting transformation of the British Army

General Sir Patrick Sanders KCB CBE DSO ADC
Chief of the General Staff, The British Army

Equality Analysis. As directed by Head of Diversity and Inclusion in [ACSO 3252](#), this strategy complies with the MOD's Equality Duty considerations.

Public Sector Accessibility. The Army has a legal requirement to comply with the Public Sector Accessibility Regulations 2018. The sponsor has confirmed that the content of this strategy complies with this.

Inclusive Language. As directed by the Executive Committee of the Army Board, all new Army policies and services must, where possible, use inclusive language. The sponsor has confirmed that the content of this strategy complies with the MOD's inclusive language guidance.

PART 1: INTRODUCTION AND FRAMEWORK

1. The framework of this document is depicted below in Figure 1:

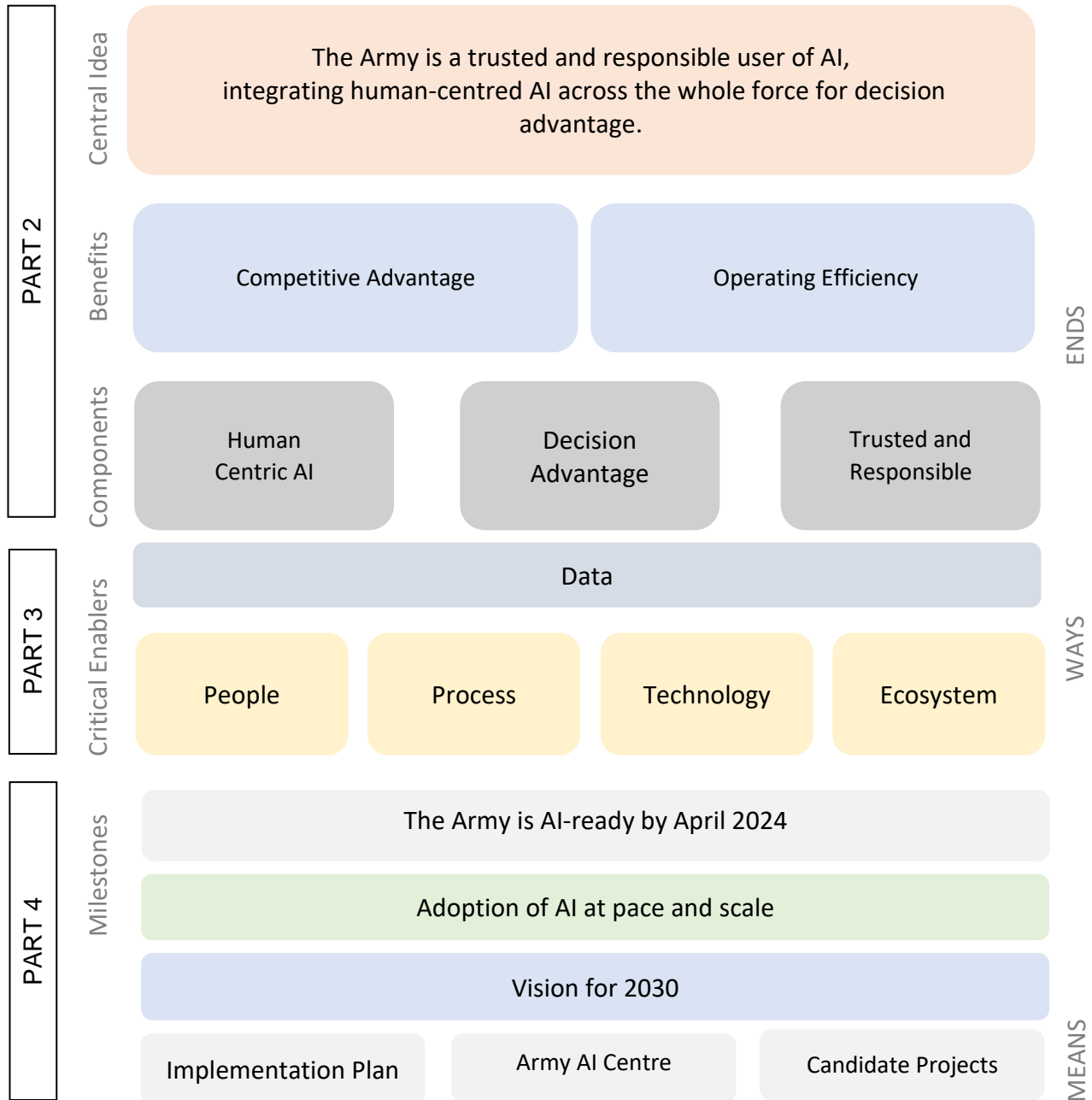


Figure 1 –The Army's AI Approach to AI Framework

2. The Army's Approach to Artificial Intelligence (AI) describes the Ends, Ways and Means required to deliver AI as an integrated military capability, in line with the National and Defence AI Strategies. It guides the Army's development of AI and signals to defence, allies, industry, academia, and partners across government (PAG), how the Army is transforming. It directly supports the Army Digital and Data Plan 2023-2025 and draws from several digital strategies including the Digital Strategy for Defence and Data Strategy for Defence. Figure 2 shows the key document relationships.



Figure 2 – Key Document Relationships

3. The National AI Strategy acknowledges that ‘Artificial Intelligence’ is a broad term. The government recognises that no single definition is going to be suitable for every scenario. In general, the following definition is sufficient for Defence and this document: ***“Machines that perform tasks normally requiring human intelligence, especially when the machines learn from data and how***

to do those tasks.¹” Where a legal definition is required, please refer to the National Security and Investment Act².

4. While there is no silver bullet for generating competitive advantage and operating efficiency, and any single technology will not wholly define competitiveness, harnessing emerging technology will be vital for the future Army.³ Of all the areas of technological development, AI has some of the greatest potential. A wave of investment and innovation in this field has been accompanied by a multitude of claims and counterclaims about the transformational impact of the technology – some heralding promise, others portending doom. The driving force behind AI's coming of age lies in the confluence of several technological advancements, above all the increase in computational power and the availability, and volume of data. These developments have allowed researchers to create ever more complex models, processing vast amounts of data quickly and efficiently, leading to greater accuracy and insight.

5. The proliferation of cloud computing and big data platforms has also played a role in the rise of AI. Such services have democratised access to storage and algorithms for businesses of all sizes. AI and data are not ‘the new oil’, they do not exist as natural resources in a raw state. They are created through purposeful action, and they have only been embraced because they allow organisations to make better-informed decisions and gain a competitive edge.

6. Our ethical and legal concerns about the adoption and potential implications of AI, may not bound the pace of development of our adversaries. It is therefore imperative that we rapidly develop, field, and scale our own capabilities, and counter-AI functions, within an appropriate framework, that enables the Army to be ambitious, safe, and responsible. The Army must be AI enhanced and recognised as responsible and capable users of the technology.

¹ National AI Strategy Sep 2021

² [National Security and Investment Act](#)

³ UK. British Army Land Operating Concept, *A New Way of Winning*, p.18

PART 2: ENDS

The Central Idea

The Army is a trusted and responsible user of AI, integrating human-centred AI across the whole force for decision advantage.

7. **Approach.** Although technology will not wholly define competitiveness, the Army will not be able to defend against AI-enabled threats without being armed with globally leading, sovereign technology.⁴ The Army's capabilities, both offensive and defensive, must become more sophisticated than our adversaries, integrated throughout all operations and domains. Data is further blurring the boundaries between war and peace and fuelling the state of constant competition. Technologies driven by data provide a means to subvert the information space, disrupt the kinetic battlefield, and affect the adversary psychologically (*its will to fight*) – all without major combat operations and its associated expense.⁵ As a result, the constant and consistent generation and utilisation of full spectrum, data driven technologies, including AI, are becoming increasingly important.
8. **Threat.** The Defence AI Strategy describes the significance of AI and the threat posed by adversaries and competitors who have made substantial investment in AI.⁶ The UK's National AI Strategy outlines the rapid development of software and AI-driven technology and how it fundamentally changes the way the Army governs, regulates and integrates the capability required to maintain technological advantage over adversaries.⁷ The Land Operating Concept (LOpC) describes how AI 'will transform the tempo of kill-chains and speed of action in land battle', become 'an ever more accessible attack vector' and that the threat posed by adversaries will be 'limited only by their ingenuity, resources and will.'⁸ Further, our adversaries are undertaking more activity below the threshold of armed conflict and do not adhere to the same moral and ethical frameworks that we do. Our adversaries may use AI in ways that would be considered unacceptable in the UK on legal, ethical or safety grounds. Therefore, Defence can expect 'AI and automation to pose significant threats and opportunities' with adversaries increasingly exploiting data and AI on an industrial scale.⁹
9. **Why now?** The velocity of technology proliferation is high. Novel technologies are created and then scaled rapidly through democratised access, for example via cloud-based exploitation. Given the investment our adversaries have made, building an Army that remains competitive in the 2030s requires transformational change now, building at pace and scale.

⁴ UK. British Army Land Operating Concept, *A New Way of Winning*, p.23, 47. The role and importance of AI is cited throughout the LOpC.

⁵ Rickly, Jean-Marc "Surrogate warfare and the transformation of war in the 2020s." Georgetown University Press, 2019.

⁶ UK. MoD. *The Defence AI Strategy, 2022*

⁷ UK. HMG. *National AI Strategy*, Sep 21.

⁸ UK. British Army. *Land Operating Concept*, p. 26.

⁹ UK. MoD. *The Defence AI Strategy, 2022*

A Vision for 2030

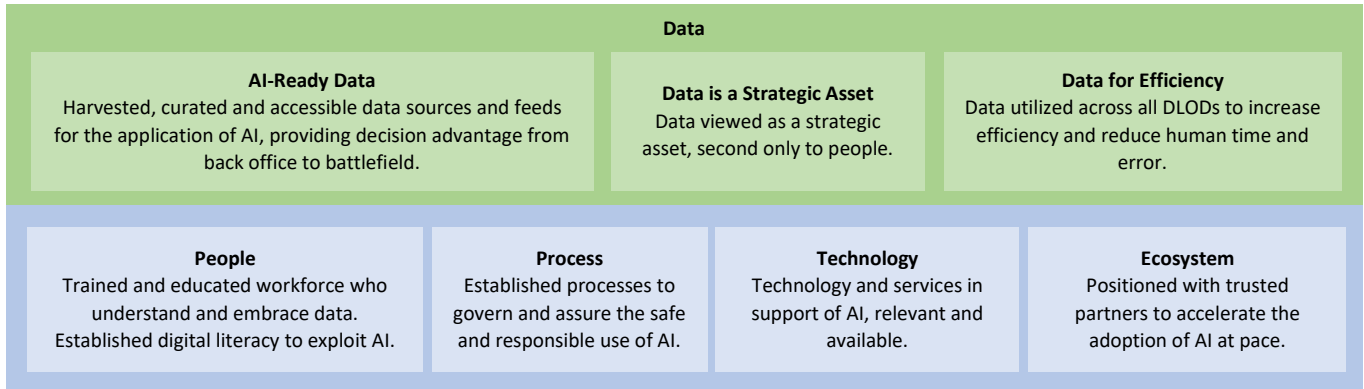


Figure 3 –The Army’s Vision for 2030

Benefits



10. **Benefits.** The value of AI is derived from its ability to access and process vast quantities of data, at the speed of relevance, according to need. This reduces the time and human interaction required to gather and process actionable information. In the **battlespace**, superior AI enables **competitive advantage** by outpacing the adversary’s decision-making cycle and controlling tempo. In the **business space**, it drives **operating efficiency** and effectiveness, by enhancing decision-making, reducing cognitive load, and improving outcomes in repetitive and complex analytical tasks. The principal benefits of the adoption of AI are:

- a. **Competitive advantage.** From strategic to tactical, AI will increase operational tempo and agility through better-informed and distributed machine-speed decision-support in response to threats.¹⁰ This can enable advantage in, and from, the Land, through outpacing adversary decision-making and, by exploiting information to degrade, disrupt, dislocate, and undermine the adversary’s confidence in their own information and intelligence.¹¹
- b. **Operating efficiency.** Across the whole force, from barracks to battlespace, appropriate use of AI can improve flexibility, productivity, training, and availability through intelligent automation.¹² To achieve this, AI must be user-centric, and its implementation and delivery must benefit our soldiers whilst reducing cognitive burden.¹³

¹⁰ *The Defence AI Strategy, 2022, p. 6.*

¹¹ UK. British Army Land Operating Concept, *A New Way of Winning* p. 48

¹² *The Defence AI Strategy, 2022, p. 6.*

¹³ UK. British Army Land Operating Concept, *A New Way of Winning*

ComponentsHuman
Centric AI**Decision
Advantage**Trusted and
Responsible

11. **Human-centric AI.** AI in the Army will complement human wisdom and judgement. As such, rather than replacing human decision-making, the Army’s adoption of AI will focus on the enhancement and support of human decision-making. This tenet is bound by the ethical principle of human-centricity, stated in the MoD’s Ambitious, Safe and Responsible AI policy document: “human responsibility and accountability cannot be removed – irrespective of the level of AI or autonomy in a system”.¹⁴

12. **Decision advantage.** Effective implementation of AI will increase decision advantage by improving the velocity and accuracy of decision-making. By exploiting the rich data available in our operating environments through the application of automation, the Army can leverage the velocity, precision, and reliability of compute power, without sacrificing the ingenuity and flexibility of human intelligence. AI provides military decision makers with the capacity to independently process internal and external data at pace, enabling humans to exploit information rather than process low-level data. The Army needs these tools now. Humans cannot compete with the compute speed required to process the volume of data which is now available. Moreover, the volume of data available to decision-makers will continue to expand, further increasing the necessity for AI.

13. **Trusted and responsible users.** Along with the rest of the MoD, the Army is committed to developing and deploying AI-enabled systems responsibly, in ways that build trust and consensus, following and shaping international standards for the ethical use of AI for Defence.¹⁵ The Army will develop and deploy AI-enabled systems for purposes that are demonstrably beneficial. The British Army’s development and use of AI technologies will always be in accordance with applicable UK and international law and based on clear ethical principles. This is the foundation for development and will guide us in our implementation of AI and its underpinning technologies.

¹⁴ UK. MoD. *Ambitious Safe and Responsible*, Final 2022, p. 9. The principle of human-centricity: the impact of AI-enabled systems on humans must be assessed and considered, for a full range of effects both positive and negative across the entire system lifecycle.

¹⁵ Much of this is derived directly from UK. MoD. *Ambitious Safe and Responsible*

PART 3: WAYS

14. **Capability Development.** Achieving the outcomes of this approach and realising the full potential of AI requires an integrated approach to capability development. The mutually supporting critical enablers; Data, People, Process, Technology and Ecosystem, underpin the effective implementation of AI capabilities that can be constantly adapted and assured in response to both threats and opportunities. To support this endeavour, the Army AI Centre (AAIC) has been established. Operating from Army Headquarters (AHQ), it serves to provide the underpinning coherence, governance, guidance, and regulation to assist the rapid operationalisation of Army AI capability for whole force in an assured, safe, and responsible way. The AAIC is the primary point of contact with the Defence AI Centre (DAIC), to ensure the Army is complying with defence regulation and learning whilst spreading best practice, in order to declare AI-readiness and scalable use across the whole Army. It will seek to ensure that the Army's AI and data work are coherent and complimentary. It will deliver the underpinning technology and provide advice, guidance, assurance, and coherence to any area initiating or delivering AI projects across the force.

15. **Research & Experimentation.** The Army will seek to build and maintain a skilled hybrid team, comprised of Regulars, Reservists, Specialists and Civilians to identify, and understand novel AI technologies as they emerge. They will perform next generation technology scanning and rapid prototyping of AI and associated technologies, infrastructure, and tools. They will maintain the Army's competitive advantage and ensure that it remains an intelligent customer, cutting through hype and hyperbole. Its primary focus will be to support at pace adoption of novel AI capabilities for whole force benefit.

Critical Enablers**Data**

16. **Data is a strategic asset.** Data is of strategic importance to the Army; access must be ubiquitous. Our people must therefore become increasingly comfortable engaging with and using data, recognising its inherent value and widespread potential for application. Moreover, its ownership must be embraced by Army business areas, programmes, and their leaders, supported by the Army Data Governance Office (DGO) in accordance with ACSO 1813, 'Data Governance and Coherence'. The readiness of AI in each business area and programme will be directly linked to its quality of data.

17. **The Defence Data Strategy** states, the Army will ensure its data is: sovereign; standardised; exploitable; private and secure by design; curated; and enduring.¹⁶ With AI, there will be a need to utilise large amounts of data that is not sovereign, and appropriate governance must be developed to assure its provenance, and integrity, before the application of AI. This will ensure the accuracy and reliability of outputs are fully understood by humans, as well as digitally auditable and explainable.

18. **Data curation and tooling.** Without data, there can be no AI. How data is harvested, labelled, curated, managed, and assured largely determines the success of AI projects. The correct application of these processes in AI's development ensures the proper operation of the system both in

¹⁶The six Data Rules Defence must apply: Exercise sovereignty over data, including accountability and ownership; Standardise data across the Defence landscape; Exploit data at the most effective and relevant point in the value chain; Secure digital data at creation, curation, when handling, storing and transmitting; Curate data, ensuring it is assured, discoverable and interoperable; Endure data as an asset beyond individual projects. UK. MoD. *Data strategy for Defence*, Edition 1, 2021.

development, and during approvals. Tools, tooling and expertise exists already in the Army, however, it will need to grow to match the demand of AI.

19. **Data Fabric¹⁷ and AI Readiness.** The data environment, the data itself and the infrastructure which hosts it, is critical to successfully scaling AI across the whole force. Developing infrastructure and supporting networks from the outset, is essential if the Army is to achieve successful AI adoption from back office to the battlefield.



20. **People.** The most important enabler to deliver AI at scale in the Army is its own people. Not all soldiers are required to be technical experts to work with AI, however, there is a significant increase in the skills required to buy, build, operate, or fight using advanced technology. Having appropriately trained and knowledgeable personnel in key positions will enable an end to the information asymmetry that can cause defence to buy technology poorly.

a. **Access to Talent.** The AAIC requires a talented cohort of individuals, spanning Regular, Reserve and Specialist soldiers and officers, Civil Servants, and contractors. However, the Army must not attempt to become a software company; exquisite skills must be leveraged through the wider ecosystem. Existing talent must be better and more flexibly retained and managed through training and education, with placements, industry exchanges and the establishment of a central team of talent. The recognition of digital, data and the application of machine intelligence as a recognised career path must also play a significant part in scaling the adoption of AI across whole force.

b. **Cultural Change.** The development and integration of a fast moving and transformational technology such as AI provides an opportunity to assist the Army in evolving from a platform-centric organisation to a software defined force.¹⁸ The AAIC will champion this change. Roles will be assigned to and aligned with Knowledge, Skills, and Experience (KSE), agnostic of rank or background where appropriate.

c. **Communicate.** A robust Engagement and Communications plan will be necessary to drive change throughout the workforce and wider ecosystem. Communication will be through a series of challenges, workshops, and forums to inspire, collaborate, educate, and recruit.

21. **Process.** The Army cannot adopt AI and be an assured, responsible, and safe user of AI without clear governance and assurance, aligning to legal and ethical practices. The AAIC will be the custodians of all matters regarding Army AI governance and will represent Army AI enabling interests across Defence. One of the AAIC key functions is to govern and accelerate AI in the Army. That is not to say that other parts of the force cannot and should not seek to develop and exploit the advantages that AI can offer, but rather that the AAIC is responsible for achieving the vision of this approach and implementing the Army's plan for AI adoption.

¹⁷ Data fabric is an architecture and set of data services that is structured to facilitate the coming together of various data environments across cloud, on premises and edge devices.

¹⁸ As defined in the British Army's Land Operating Concept.

- a. **Governance.** AI will be governed first and foremost according to its use. It must adhere to existing guidelines and legislation appropriate to the function that it is supporting within the Army's battlefield or back-office environment: safety, security, intellectual property, equality, GDPR, health, risk management etc. It must also respond to emerging AI norms, both sovereign and international. AI governance will also seek to address accountability, traceability, bias, and other aspects as AI governance evolves.
- b. **Ethics.** The Army will support and contribute to the developing AI Ethics community across Government and Defence. The AAIC will develop policy in support of the draft 'Dependable AI in Defence' policy. The Army will have an accountable officer responsible for AI Ethics implementation.¹⁹
- c. **Leadership.** The AAIC will provide the visible and vocal leadership to drive adoption of AI, until it becomes business as usual. Candidate initiatives from across the Army will be assessed based on operational need and grouped into cohorts in accordance with the underlying technology, to generate an economy of scale. This will underpin the adoption of common standards and protocols. The AAIC will define the Army's AI priorities for DAIC support.
- d. **Assurance.** Working with the Design Authorities along three lines of effort: ethical, legal and technical, the AAIC will provide advice to duty holders who manage activities which could be a risk to life. Working closely with the Army Data Governance Office and MoD AI Ethics Advisory Panel, the Army will publish, regularly review, and adhere to its own *Statement on Trustworthy and Ethical AI*.
- e. **Scaling Across the Whole Force.** The AAIC will cohere Army AI activity, guide strategic investment, and exploit opportunities to maximise shared benefit across the whole force. The adoption of AI in closed 'stove-pipes' will be expensive and inefficient, therefore a systems thinking approach must be applied across the enterprise when adopting AI. Everyone must consider utility beyond their own needs and good enterprise architecture will result in exponentially better value for money. Research and experimentation will inform the selection and development of the most appropriate solutions, verifying, validating, and iterating, through small-scale rapid prototyping. This will be essential in understanding how and if a capability will scale for whole force benefit.
- f. **Security.** The Army's adoption of AI signals a threat to our adversaries, who will seek to undermine and degrade our capability, whilst developing their own at pace. From AI development to operate phases, vulnerabilities which may be exploited by our adversaries should be surfaced, understood, and developed as a risk calculus. This will direct methods to counter adversarial use of AI whilst protecting our own.
 - i. **Understand.** Drawing on open and closed reporting, including from PAG, an understanding of current and future adversary AI capability will be determined, including but not confined to data poisoning tactics, deep fake generation or directed cyber-attacks.
 - ii. **Protect.** AAIC will develop methods to mitigate the identified risks. This will span research, development, validation, and operation of AI systems.

¹⁹ Ministry of Defence – Written Evidence (AIW0035) committees.parliament.uk/writtenevidence/121708/pdf/

iii. **Counter.** Human centric interaction within the virtual environment, leads to a digital footprint. The AAIC will ensure obfuscation methods are employed, and appropriate training given to ensure adversaries are unable to determine digital footprint through their own AI algorithms.

22. **Technology.** To build and maintain AI readiness, the Army will continue to invest in, technology, and services to better understand and improve the implementation of AI successfully across the whole Army, at all classifications. The Army will seek to develop existing and new capabilities at all security levels through three main routes: adopting readily available 'Commercial off the shelf tools (COTS), co-creating bespoke variants to COTS or developing proprietary solutions, unique to the needs of the Army and Defence.

a. **Compute.** Army access to compute will be vital to the volume and velocity of data processing requirements for more sophisticated AI application, particularly at higher security classifications. The AAIC will work to influence future activity in the Army and Defence for the procurement of appropriate, agnostic compute, with relevant and leading-edge processing power (novel chip technologies).

b. **The Network as the Computer.** The increasing demand for AI will require increasing compute capacity to be available across the full remit of Army activity, centrally and at the edge²⁰. The ability to request and use additional compute power over a network, according to operational need will be vital to retain decision advantage. The Army should develop technology architecture according to 'the network as the computer', where the network itself forms the total of compute capabilities, distributed throughout.

c. **Exploiting Technological Advancement.** Pockets of expertise are emerging across the force. These must be harnessed and developed to ensure the Army is best positioned to gain Competitive Advantage and Operating Efficiency through the rapid implementation of AI projects. This will enable over the horizon technology scanning, incorporation of nascent and novel technologies into extant work-strands, learning through rapid prototyping and scaling AI capabilities at pace. These capabilities will allow users across the force to see, touch and feel AI so that they can better understand its application.

23. **Ecosystem.** The Army will harness the combined knowledge and full potential of the UK and global AI ecosystem, from hobbyists to makers, academics to experts, SMEs (Small Medium Enterprises) to major primes, think tanks and international allies and partners.²¹

a. **Engage.** Innovative SMEs must be supported to deal directly with the MoD through fair, frequent, and transparent competitions and awards with meaningful incentives.²² Competitions and awards must result in demonstrable progress against a valid use case. The AAIC will undertake market analysis to understand the emergent trends in AI advancement, and which organisations are best placed to provide this capability to them. These organisations will be cohered into a meaningful ecosystem which supports whole force needs for AI adoption, by the AAIC. Reach back to industry will be through the Industry Advisory Group (IAG), ensuring the Army remains in touch with the latest developments in academia and industry.

²⁰ Edge computing is an emerging computer paradigm which refers to a range of networks and devices, at or near the user.

²¹ Small and Medium-Sized Enterprises and Defence Prime Contractors. The MoD has committed to supporting SMEs in the DfIT's action plan. See UK. DfIT. *SME Action Plan 2020-2022, 2020*

²² The AI Dynamic Purchasing System from Crown Commercial Services offers artificial intelligence services to the whole of the public sector and their associated bodies and agencies.

- b. **Research.** To take advantage of the exponential rate of technological advance, the AAIC will build a close relationship with academia and the scientific community. The AAIC will establish Memoranda of Understanding (MOU) with selected institutions and commission academic reports to contribute to, and benefit from, the wider UK body of knowledge. Similarly, the AAIC will engage with internal and external stakeholders on matters of international laws, norms and ethics which will set the landscape for the application of AI in Defence and National Security scenarios, both locally and internationally.
- c. **Accelerate.** Wherever possible, the creation or adoption of new technology with open source, Commercial Off The Shelf (COTS) and Modified Off The Shelf (MOTS) options will be prioritised. Only when there is a definitive need, but the supply does not exist, will we consider commissioning bespoke products. The use of these technologies will be enabled across the Army by the development of the necessary tools and tooling, as well as the appropriate commercial contracts.
- d. **Growing Stronger Together.** The British Army will actively seek out areas of collaboration with international allies and partners. By co-creating solutions which align with the critical enablers, the combined capability will deliver world leading Defence and National Security thinking in the adoption and application of AI, driving competitive advantage and operating efficiency.

Milestones

The Army is AI-ready on 1 Apr 2024

Adoption of AI at pace and scale

Vision for 2030

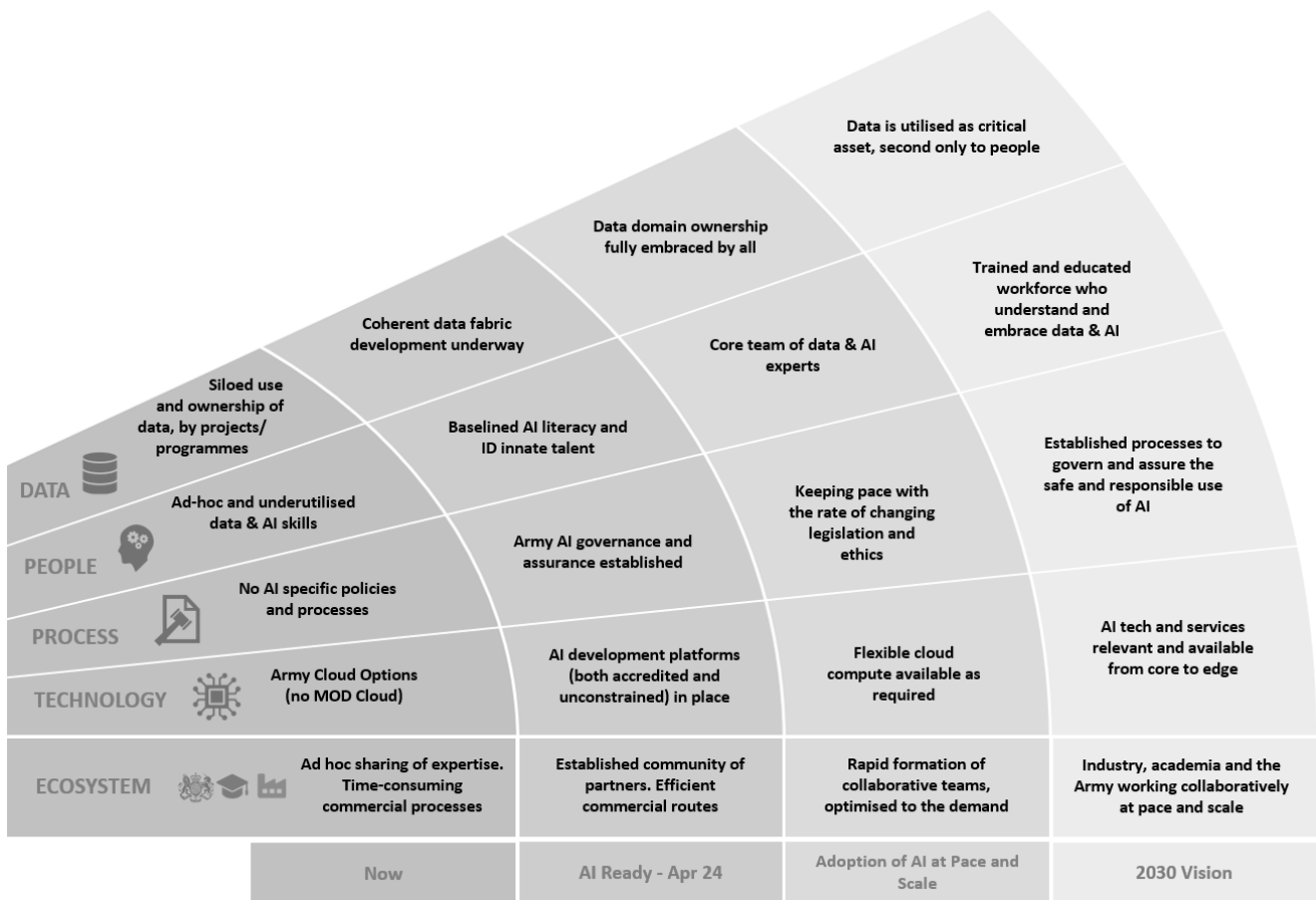


Figure 4 –The Army AI Strategic Roadmap

24. **The Army is AI Ready.** The Army will be AI ready when relevant parts of the workforce are enabled with a baseline AI digital literacy, data quality is enhanced, access to technology and established relevant processes required to deliver assured, safe, and responsible AI.

25. In line with the Defence AI Strategy²³, the Army must also consider five elements as part of AI readiness:

- a. The Army will have identified the benefits of AI adoption to their organisation and ensured the application of AI is the right solution.
- b. It will have developed the correct culture and leadership models, policies, and skills to act rapidly on AI-driven outputs.
- c. It will have access to structured exploitable data and will be continuously collecting data.
- d. It will work thoughtfully with Defence procurement to access scalable and flexible compute power.
- e. The Army will build, test, deploy, update, and manage AI models appropriate at the pace of relevance.

²³ Defence AI Strategy, Published June 2022, Chapter 2. Transform into an 'AI Ready Organisation',

26. The **adoption of AI at pace and scale** will require the following:
- a. **Data.** Training (synthetic) and live data available to enable AI systems to be developed and iteratively improved across security classifications. The routine collection and appropriate ownership of data across all activities, with a coherent master data catalogue and suitable meta data to exploit data for AI.
 - b. **People, Culture and Skills.** An endorsed programme to continuously train a skilled user community with access to expertise in partner organisations, to underpin an organisational shift that employs AI as routine.
 - c. **Process, Governance and Policies.** Bespoke, governance policies, processes, methods, and resources in place to assure the safe and responsible use of AI.
 - d. **Infrastructure, Technology and Services.** Sufficient solutions and agreements in place to collect, store, process data and train machine learning models. Working towards flexible cloud solutions to match demand surges where required.
 - e. **Ecosystem.** Appropriate and relevant industry and academic outreach, which allows the Army to integrate leading edge technology into extant and novel processes which maintain competitive advantage.

Further out to 2030

27. **AI is deployed and sustained at scale.** With accessible technology, skilled people and governance in place, the Army works closely with industry to scale the secure, assured, safe, and responsible use of AI.
28. **Measuring Progress.** A Maturity Assessment Framework will be created against the five critical enablers (data, people, process, technology, and ecosystem) to assess progress against quantifiable advantage gained. Expressed in qualitative terms, the measures of success in 2030 should align to the following:
- a. **Data is a critical asset.** The Army values data collection, curation, and exploitation in everything that it does. With every domain, from back office to battlefield appropriately owning and enhancing its data by default. New emergent benefits of exploiting enterprise-wide data are regularly identified and are fed back to improve and optimise data governance.
 - b. **The Army has leading data and AI skilled people.** Across the whole force, there are the skills and culture to benefit from the dynamic evolution of AI. A core of talented experts grown organically, aligned to KSE and enriched through meaningful engagement into a vibrant ecosystem with academia and industry.
 - c. **Established assured, safe, and responsible.** The Army is trusted by society as a responsible user of advanced data processing and human-centred AI through the open and transparent communication of a vision, delivery principles and obligations under appropriate legal and ethical frameworks.
 - d. **Critical technology is accessible.** The Army has created the common foundations on which any future software technology can be utilised. The Army has tools and tooling so that AI can be deployed rapidly, to core, near-edge, and edge devices. With options to scale compute as necessary, the Army is frugal and green in its use of technology.

e. **The Army is valued within the ecosystem.** There is a regular exchange of people, ideas and technology across industry, academia and our allies and partners to ensure the consistent uptake of advanced data capabilities, which collectively stimulate and support the UK's defence and security AI ecosystem.

PART 4: MEANS

29. **AAIC.** Established within Army HQ, the AAIC will provide the governance, coherence, and oversight to achieve AI readiness and deliver AI at pace and scale. Within this framework, the AAIC will seek opportunities to **accelerate** the adoption of AI capabilities, **engage** with the AI ecosystem of partners and **govern** the use of AI throughout the Army, in order to ensure the ambitious, safe, and responsible adoption of AI.



Figure 5 –The Army AI Centre

30. **Data.** Supported by Programme THEIA activity, the Army Data Governance Office (DGO) will guide the Army and assure its data, conforming to Defence policies²⁴. The Army Data Analytics Team (ADAT) will form the core of data experts to help the Army to curate its data. All data domain owners²⁵, with the advice and support of the DGO and ADAT, will actively seek to improve the quality of their data. The Information Design Authority will continue to oversee the development of a coherent data catalogue.

31. **People.** The AAIC will employ a hybrid team of military, civilian contractors, and civil servants to form a cognitively diverse and blended team of people across several Army Directorates. The Army's Principal AI Officer will be the custodian of the AAIC, supported by data, technology and architecture experts from the Information Directorate, research and experimentation experts from the Futures Directorate, digital transformation managers from Programme THEIA, legal advisors from Directorate Army Legal Services and others as required. To exploit and develop existing talent in the Army, military and civil servants with key skills will be encouraged to join a core of experts within the AAIC and support teams undertaking research and experimentation. The AAIC will cohere Army AI

²⁴ Data Strategy for Defence, Defence Data Ownership Framework, Defence Data Governance Policy, Defence Data Lifecycle Policy, Defence Data Quality Policy and Defence Data Sharing Policy.

²⁵ ACSO 1813, Data Governance and Coherence

skills development in line with Programme THEIA and provide advice to Programme CASTLE. Talent from across the Force will be identified through their involvement in a series of pathfinding AI projects conducted by the Futures Directorate. This will act as feed of Army talent (military and civil servants) into the AAIC core team of experts.

32. **Process.** The AAIC will establish new roles to align with developing AI ethics governance at Defence and Government levels. It will conform to the 'Dependable AI in Defence' and 'Assured Safe and Responsible AI' policies, as well as help others to navigate extant legislation. Directorate Army Legal Services will provide additional legal advice to support the developing landscape of AI legislation. New roles in the AAIC will establish new processes and policies to govern and assure accountability and accuracy of AI in the Army. Utilising enterprise architects and Programme THEIA portfolio managers, the AAIC will cohere and optimise AI adoption across the Army.

33. **Technology.** Under Programme THEIA, the adoption of cloud for the Army will support the development of Army AI. The AAIC will champion and leverage technology development across Defence and consolidate demand signals for data processing, and AI compute to assist the procurement of agnostic and flexible cloud compute services.

34. **Ecosystem.** The Industry Advisory Group (IAG) will continue to be supported by the AAIC to regularly share and enhance the Army AI ecosystem. Industry and academia experts are needed to accelerate lines of research and development.

35. **Pathfinding Projects.** A series of high impact research and experimentation projects will build understanding of skills, technology, data, and governance. These rapid delivery cycles will be sponsored, delivered, and supported by the Futures Directorate Research and Experimentation team, to meet a range of use cases. Initially, these will focus on the enhancement of existing forces and seek to generate an economy of scale and utilise novel technologies.

36. **Supporting - AI at Scale.** To deliver AI at scale the AAIC will establish an operating model to provide support and accelerate federated Army AI activity, continuing the enhancement of Army Digital Transformation and supporting Programme THEIA. It will harness support from the DAIC, Army research and experimentation and internal expertise. The AAIC will support conceptual development and capability development across every aspect of the Army:

- a. **Command.** Faster, more accurate, and data-driven, decision-making, and reduced cognitive load for commanders and soldiers.
- b. **Intelligence.** Wider assimilation of data allowing increased situational awareness, generating enhanced understanding, from exponentially greater fusion and exploitation.
- c. **Manoeuvre.** Increased tempo, mass and freedom of manoeuvre using offensive AI enabled capabilities and optimising in-service hardware.
- d. **Information Activities.** AI assisted content generation, providing better targeted and tailored messaging to deliver greater effect.
- e. **Fires.** Reduced cognitive burden on operator, with increased accuracy and velocity of the targeting cycle.
- f. **Capacity Building.** Exploitation of data for more effective understanding of, and collaboration with, host nations, partners, and allies.

- g. **Cyber.** Pattern analysis to detect and identify adversary cyber activity, reducing response time and exposure to threat vectors.
- h. **Sustainment.** Better resourced force using predictive sustainment, predictive vehicle maintenance, increased workforce availability through business-as-usual automation.
- i. **Protection.** AAIC will lead the Army's response to understanding and protecting its own use of AI and countering the effect of adversary AI.
- j. **Efficiency.** Increased efficiency of back-office tasks to increase the timeliness and accuracy of decisions and focus human endeavour where most needed.

37. **Learning Lessons.** Although the potential benefits of AI are immense, project failure rates in the commercial sector demonstrate the challenges associated with scaling up from pilot systems.²⁶ Furthermore, since the 1950s, there have been cycles of hype and excitement about AI, interspersed with disappointment during the so-called "AI winters".²⁷ Those winters were the result of promises not being delivered on. The Army, using this approach paper as a guide, enters its next and exciting phase of digital evolution as an increasingly informed data and AI practitioner. It must leverage this to ensure, supported by the critical enablers, it now successfully scales AI adoption across whole force.

²⁶ Advancing AI ethics beyond compliance: From principles to practice, IBM Institute for Business Value, April 2020.

²⁷ The term AI winter first appeared in 1984 as the topic of a public debate at the annual meeting of the American Association of Artificial Intelligence.